## Book Review

A Laboratory Guide to the Study of the Evolution of the Wings of Insects, by J. Chester Bradley. 2nd ed. Ithaca, N. Y. Daw, Illston & Co. 160 pages, 70 plates. 1939.

This is a revision of a similar guide published in 1931. The first 15 pages deal with venational nomenclature, origin of wings, nature of veins, and the archetype venation. It is noteworthy that the concept of the anterior and posterior media and cubitus is used in the discussion of the latter topic. The remainder of the guide consists of a synopsis of the venation in the principal orders of insects, both recent and extinct. This part of the text is arranged systematically, with the more generalized groups considered first. The discussion under each group stresses the evolutionary significance of the wings concerned. The 70 plates at the end of the guide include drawings of wings of 83 insects; the lettering of the veins has been left for the student.

This guide should prove very useful in general courses in entomology, as well as those dealing with morphology and evolution. It contains much information otherwise available only in numerous journals. In a few instances, however, statements about the wings of fossil insects are somewhat out-of-date. On page 40, for example, reference is made to the fact that Permotipula is known from only a single wing, so that we have no means of ascertaining whether this insect had two or four wings. However, a complete Permotipulid, having four wings present, was described by Tillyard in 1937 (Nature, Jan. 9, p. 66). One obvious error has crept into the text: on page 26 and plates 10 and 12, the ordinal name Protoblattaria has been used for all fossil cockroaches. Professor Bradley tells me that this use of the term Protoblattaria was unintentional, and is the result of an oversight which probably occurred when the manuscript was being arranged.

F. M. Carpenter.